Claims

1.   A method for the early detection of a deviation in
printed images (03) created by a printing press during an ongoing
production wherein, in addition to a decision regarding a good or
poor print quality, a further decision threshold is provided,
wherein an actually recorded printed image (03) is compared with a
reference image, characterized in that in case of a deviation of
the actually recorded printed image (03) from its reference image
the deviation existing between the actually recorded printed image
(03) and the reference image is evaluated on the basis of two
decision thresholds (W) and (F).

2.   The method in accordance with claim 1, characterized in
that one decision threshold constitutes a warning threshold (W)
and the other decision threshold an error threshold (F).

3.   The method in accordance with claim 1, characterized in
that each decision threshold (W) and (F) is set independently of
the respectively other one.

4.   The method in accordance with claim 3, characterized in
that by means of the adjustable decision thresholds (W) and (F)
that number of deviations is determined starting at which a
warning or an error report is generated.

5.   The method in accordance with claim 1, characterized in
that a warning is generated when the warning threshold (W) has
been reached.

6. The method in accordance with claim 1, characterized in that an error report is generated when the error threshold (F) has been reached.

7. The method in accordance with claim 1, characterized in that a contrast (AK) existing between the actually recorded printed image (03) and the reference image is evaluated as a deviation between the actually recorded printed image (03) and the reference image.

8. The method in accordance with claim 7, characterized in that a warning is issued if the contrast (AK) in respect to the reference image for one or several pixels (i) lies above the warning threshold (W), but still below the error threshold (F).

9. The method in accordance with claim 1, characterized in that in the course of a learning phase during a production classified as being good, amplitude values (Axy) in a line-scanning color camera (01) or area-scanning camera (01) are computed into a reference image by an image processing system (04).

10. The method in accordance with claim 9, characterized in that the amplitude values are applied to a pixel field.

11. The method in accordance with claim 9, characterized in that the reference image is generated with a maximum value (Aimax) and a minimum value (Aimin) for each pixel (i).

12.   The method in accordance with claim 9, characterized
in that the reference image with the respective maximum values
(Aimax) and minimum values (Aimin) is generated for each pixel
(i).

13.   The method in accordance with claim 11 or 12,
characterized in that the amplitude values (Aip) of the actually
recorded printed image (03) are compared with the reference image
consisting of the course of the respective maximum values (Aimax)
and minimum values (Aimin), and the deviation of the amplitude
value (Aip) of the actually recorded printed image (03) from the
maximum value (Aimax) and minimum value (Aimin) is determined for
each pixel (i).

14.   The method in accordance with claim 13, characterized
in that in the course of the comparison of the amplitude values
(Aip) of the actually recorded printed image (03) with its
reference image, the contrast (AK) existing between the actually
recorded printed image (03) and the reference image is evaluated.

15.   The method in accordance with claim 14, characterized
in that an error is indicated as soon as the contrast (AK)
existing between the actually recorded printed image (03) and the
reference image of a pixel (i) lies above the error threshold (F).

16.   The method in accordance with claim 10, characterized
in that a check is made whether several pixels (i) placed locally
close together stand out of the pixel field and constitute a
deviation of increased area.

17.   The method in accordance with claim 16, characterized in that the area of the pixel field in which a deviation from the reference image exists is determined.

18.   The method in accordance with claim 16, characterized in that the decision thresholds (W) and (F) are adjusted for the area of the pixel field.

19.   The method in accordance with claim 16, characterized in that the area of the pixel field above the error threshold (F) is determined.

20.   The method in accordance with claim 16, characterized in that an error weight (FG) is set for a local area of the pixel field, wherein after the error weight (FG) has been exceeded, an error is reported independently of the area of the deviation.

21.   The method in accordance with claim 1, characterized in that a display of the deviations is provided on a monitor (06) separated in accordance with the type of deviation.

22.   The method in accordance with claim 21, characterized in that the deviation is displayed on the monitor (06) superimposed positionally accurately on the actual printed image (03).

23.   The method in accordance with claim 21, characterized in that the display represents a deviation in the quality of the printed product.